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ABSTRACT

Three major sets of factors are involved in the evaluation of classification systems: evaluation of the system according to purpose, according to design, and according to functional operation. Part A of this paper is concerned with the basic detail needs for evaluation of purpose. Eight different kinds of classification systems for the subject, library science, are differentiated. The outline according to purpose shows diversity and, at the same time, it indicates the uniformity and perhaps the ubiquity of classification systems. Part B outlines the basic detail needs for evaluation of design of classification schemes. The evaluation of design must relate to the purpose of the classification dealt with, not to that of some other classification. Part C outlines the basic detail needed for evaluation of functional operations. Samples of the eight types of classification schemes analyzed for purpose in Part A are shown to exemplify how many ways one subject, namely, classification, can be classified. (see also LI 002 796 through LI 002 806). (Author/NH)

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SUBJECT ANALYSIS OF LIBRARY SCIENCE LITERATURE
BY MEANS OF CLASSIFICATION SYSTEMS: OUTLINE
OF CRITERIA NEEDED FOR EVALUATION

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LI 002 807

CONFERENCE ON THE BIBLIOGRAPHIC CONTROL
OF LIBRARY SCIENCE LITERATURE

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INTRODUCTION

In recent years, there has been considerable interest in classification systems as a means of organizing information (recorded messages) for transfer purposes. Arguments have occurred and positions have been taken with regard to the efficacy of this or that type of system. At the same time, the term "classification" itself has been used with varying degrees of broadness, all the way from a very narrow hierarchical view to a view so broad that it takes in practically everything that can be conceptualized and defined.*

The current concern with classification has had an apparent effect on the various methods of bibliographic control applied to library science literature. Actual analysis of all the methods would make a good topic for a doctoral dissertation and will not be performed here. Only an outline for such a study has been prepared and is presented in brief form, with examples, as a basis for discussion.

*The "Elsinore definition" of classification will be used by the authors:

By "classification" is meant any method creating relations, generic or other, between individual semantic units, regardless of the degree in hierarchy contained in the systems and of whether those systems would be applied in connection with traditional or more or less mechanized methods of document searching. Classification Research; Proceedings of the Second International Study Conference held at Hotel Prins Hamlet, Elsinore, Denmark, 14th to 18th, September 1964 (Copenhagen, Munksgaard, 1965), p.544.

Three major sets of factors are involved in the evaluation of classification systems: evaluation of the system according to purpose, according to design, and according to functional operation. Classification systems are considered in an objective fashion.

Subjective aspects, such as personal factors and individual differences in interpretation and judgment, which would influence application, have not been considered, though conceivably these could affect operation. The objectivity proposed in this outline may be impossible to achieve, but at least an attempt at objectivity should be made so that those factors which are entirely subjective can be recognized separately.

In Part A, we have considered the question, "Why was this classification made?" Then in Part B we moved on to "How is this classification made?" Finally in Part C we come to "How well does this classification do what it was made to do?" Samples of the eight types of classification schemes analyzed for purpose in Part A are shown to exemplify how many ways one subject, namely, classification, can be classified.

PART A. BASIC DETAIL NEEDED FOR EVALUATION OF PURPOSETypes of classification analyzed for purposeType 1) for books and reports:

[Dewey Decimal Classification, Universal Decimal Classification, Library of Congress Classification, Bliss Bibliographic Classification, Colon Classification-- see Appendix A]

Purposes:

To place books, reports in order on a shelf
 (array in a consistent sequence)
 To physically group books on like subjects
 together (array in a helpful sequence)
 To fit into a more general classification
 To be used directly (for searching open stacks
by a person on foot-for browsing)
 To be used by student, scholar, practitioner,
 specialist, general reader

Type 2) for classified catalogs:

[Classification Research Group's Faceted Classification,
 (see Appendix B) also Dewey, UDC, LC in Appendix A)]

Purposes:

To search for all the books in a library on a
 given subject
 To display that subject in its full relationships
 with generic and specific as well as coordinate
 subject classes
 To avoid the one-book-one-place impasse of physical
 shelf arrangement by classification
 To fit into a more general **classification**
 To be used indirectly (as a rule, **must use** an
alphabetical index to learn notation for area to
be searched, and to request items in closed stacks)
 To be used for browsing in one place (in a book or
 card catalog used as a unit rather than by travelling
 over floors, levels, buildings)
 To be used by student, scholar, practitioner, specialist,
 general reader

Type 3) for content of books:

tables of contents by type of activity,
by type of library, or by a combination
of the above (see Appendix C)

Purposes:

To display author's or editor's organization
and interpretation of his subject
To enable reader to follow author's flow
of thought more readily
To enable { cataloger } to analyze text
 { indexer }
 { abstracter }
To be used by student, scholar, practitioner,
specialist

Type 4) for classified indexes to books:

(see Appendix D)

Purposes:

To enable author to indicate specific
concepts in detail
To be used by reader to pinpoint access by
name, subject, etc.; to get at full content,
regardless of author's organization of his work
To be used by student primarily, but also helpful for
scholar, practitioner, specialist

Type 5) for arrangement of bibliographies:

- a) retrospective
- b) current (see Appendix E)

Purposes:

To order bibliographies in a helpful sequence
To group items in a like subject together,
preferably the sequence used by specialists
in that subject and not necessarily to fit a
more general classificatio: scheme.

To permit searching for all the books and articles on a given subject that have been included (though multiple entry is possible, it has rarely been used)

To provide browsing in list form, often with annotation or critical comment (where used, selection is ipso facto critical)

To be used by student, scholar, practitioner, specialist

Type 6) for directories of personnel, research projects, etc.
(see Appendix F)

Purposes:

To create helpful subsets of classes according to type of specialty (separates parts)

To permit multiple placement where applicable

To be used by all persons needing rather specific information

Type 7) for classified indexing or abstracting serials covering book, periodical and report literature

Note: books are essentially an established literature. Articles and reports are a flexible, mobile, changing literature.

(see Appendix G)

Purposes:

To permit rapid access to totality of references (and possibly abstracts) about CURRENT literature

To achieve speed of access and widest coverage by dividing subjects into manageable portions

To fit a flexible classification needed for current literature on subject material that is not fixed in focus (i.e., frequently changing organization and emphasis,

To be used by scholar, practitioner, specialist, and and the advanced student

Type -) for thesauri or index term lists

(see Appendix H)

Purposes:

- To provide a framework for structuring the thesaurus or index term list
- To ensure that related terms are grouped so that all (not part) of their significant relationships are caught
- To define homographs, uncover synonyms, limit metaphors by indicating class membership
- To be used by makers of thesauri or index term lists and as needed by those who consult them

PART B. BASIC DETAIL NEEDED FOR EVALUATION OF DESIGN OF CLASSIFICATION SCHEMES

Note: In all cases, evaluation of design must relate to purpose of the classification dealt with, not to that of some other classification.

- 1) Analysis according to Ranganathan's Canons of Classification: Prolegomena to Library Classification 2d ed. (London, Library Assn., 1957)

For Characteristics (Foci)

- | | |
|-----------------------------|--------------------------------|
| 1. Canon of Differentiation | 4. Canon of Ascertainability |
| 2. Canon of Concomitance | 5. Canon of Permanence |
| 3. Canon of Relevance | 6. Canon of Relevance Sequence |
| 7. Canon of Consistency | |

For Array

- | | |
|----------------------------|----------------------------------|
| 8. Canon of Exhaustiveness | 10. Canon of Helpful Sequence |
| 9. Canon of Exclusiveness | 11. Canon of Consistent Sequence |

For Chain

- | | |
|---|------------------------------------|
| 12. Canon of Decreasing Extension
for Filiatory Sequence | 14. Canon of Subordinate Classes |
| 13. Canon of Modulation | 15. Canon of Coordinate
Classes |

Terminology

- 16. Canon of Currency
- 17. Canon of Reticence

- 18. Canon of Enumeration
- 19. Canon of Context

For Notation

- 20. Canon of Relativity

- 21. Canon of Expressiveness

- 22. Canon of Mixed Notations

Queries:

- a. What parts of Ranganathan's canons are applicable to the eight types of classification mentioned in Part A?
- b. Should the characteristics of the different types influence the application of the canons?
- c. Are any new canons needed?

2) Statement of philosophy governing the classification system.

The introduction to a classification system should include a short explanation of the general philosophy underlying the system. If there is no explanation, one should be derived by a careful inspection of the system itself. This statement should cover the following points enumerated here as queries:

Queries:

- a. Is the system hierarchical, faceted, coordinate or other?
- b. Is the structure based on logical exposition or on building from words or concepts?
- c. Is the system theoretically or empirically derived?
- d. Are the methods of exposition based on the evolutionary or revolutionary approach to the development of systems?

- e. What types of concepts are used to express interrelationships among aspects of recorded knowledge being treated in the system? (e.g., scope, note, "prefer" or "use" note, and cross references)
 - f. What are the structural dimensions of the system; what dimensional concept of knowledge underlies the classification? (e.g., philosophical basis used to determine parameters of what constitutes "knowledge")
- 3) Analysis to discover helpfulness or hindrance of collateral or sub-parts of a scheme (such as notation, format, dimensions, auxiliary schedules, or similar addenda)

Queries:

- a. Does the notation hinder the display of class relationships?
- b. Does the format permit representation of a three or four dimensional structure?
- c. Do the auxiliary schedules provide enough valuable information to counter-balance their awkwardness in usage?
- d. How many type fonts are necessary for clarity?

PART C. BASIC DETAIL NEEDED FOR EVALUATION OF FUNCTIONAL OPERATION

- 1) Analysis of each system in terms of how well it does what it was designed to do (from the point of view of its STATED PURPOSE)
- 2) Analysis of the adaptability of a system to different kinds of needs (as given in 1)
- 3) Analysis of the adaptability of a system to mechanization (especially to show how theoretical principles in design will be affected by advantages and limits of computers)

- 4) User-type of analysis to show what is or will be demanded of a classification by various types of users.* (This should be a user's use study, not what the user thinks he wants, which is a matter pertaining to the evaluation of purpose)
 - a. Responsiveness of classification to various types of users according to their backgrounds (e.g., their degree of sophistication will affect their approach to the classification)
 - b. Responsiveness of parts of the classification in use, in terms of class description, structure, index terms, classified index terms, notation, format, ability to accept new data, realignment as conditions change, etc.

CONCLUSION

The mere fact of making an analytic outline has yielded some interesting information. Without analysis as to purpose--even the sketchy one made here--we could not have differentiated eight different kinds of classification systems for the subject, library science. At the same time, we might have considered some of these systems as something other than classification, particularly classification for indexes to books, directories, and thesauri or index term lists. The outline according to purpose shows diversity and yet at the same time it indicates the uniformity and perhaps the ubiquity of classification systems. It also indicates the fullness, or lack of it, in almost all schemes.

*Note: The USER in such studies would be both the user who applies the classification system and the user who makes use of the end-product of such application.

The outline for purpose sets up the basic corpus of material to be studied. The outlines according to design and functional operation, get down to the brass tacks of evaluation. Here the different factors to be considered can be studied for each system, as well as comparatively for all systems--with the proviso that the purpose be kept in mind in rating design and operation so that a system is not judged in terms of some factor it was never designed to encounter.

The whole outline reveals how much work is still needed in classification research. There are at least four dissertation possibilities here: thorough analysis of the several different classification methods of bibliographic control, evaluation of classification systems according to design, evaluation according to workability and adaptability, and evaluation by thorough user-analysis, considering the interaction of the user-applier and the user-reader.

The literature of library science is a manageable piece with which to work, and at the same time it contains most of the various types of classification systems encountered. This microcosm should be an excellent base for sound studies; the results forthcoming could then be applied to study of classification in other subjects and perhaps eventually even to that of the universe of knowledge itself.

Francis Levy's study, made for a recent meeting in Marseilles on the "documentation of documentation" is a step in this direction. That meeting and this one in Albany may mark the beginning of much needed study and exploration of our own field's bibliographic control problems and their solutions.

December, 1967

Francis Levy. "Compatibility between Classifications and Thesauri: Evaluation of a First Study in the Field of Information Storage and Retrieval." (Centre National de la Recherche Scientifique, Groupe D'etude sur L'information Scientifique, 1967). Report No. COM./30/67/F.L. (See Appendix I of this paper for excerpts of his work)

APPENDIXES
To Show
Types of Classification
Analyzed for Purpose

Appendix A
Type 1 (a)

*Third Summary
The 1000 Sections*

Library science

Generalities		025.2	Acquisitions
			Selecting and acquiring books, periodicals, other materials by purchase, exchange, gift
000 Generalities	050 Gen		
001 Knowledge	051 Am		
002	052 Oth	.21	Book selection
003	053 Oth		Principles and theory
004	054 Fre		
005	055 Ital		
006	056 Spa	.23	Order work
007	057 Sla	.25	Physical preparation for shelves
008	058 Sea		
009	059 Oth	.26	Exchange and gift work
010 Bibliographies & catalogs	060 Gen		Including United States Book Exchange [formerly 021.85]
011 General bibliographies	061 In l		
012 Of individuals	062 In l		
013 Of specific classes of writers	063 In		
014 Of anonymous & pseudon. works	064 In	.3	Cataloging
015 Of works from specific places	065 In		
016 Of specific subjects	066 In	.32	Descriptive cataloging
017 General subject catalogs	067 In	.33	Subject cataloging
018 General author catalogs	068 In		Use 025.330 001 - 025.330 009 for standard subdivisions
019 General dictionary catalogs	069 Mu		For classification, see 025.4
→ 020 Library science	070 Nev		
021 The library	071 In		
022 Physical plant of libraries	072 In		
023 Library personnel & positions	073 In	.330 01-.339 99	Subject headings
024 Regulations for use of libraries	074 In		Divide like 001-999, e.g., subject headings in science 025.335
→ 025 Library economy	075 In		
026 Special libraries	076 In		
027 General libraries	077 In		
028 Reading & reading aids	078 In	.34	Cataloging of special materials
029 Indexing & documentation	079 In		Divide like 025.17, e.g., cataloging of maps 025.346
030 General encyclopedic works	080 Gen		
031 American	081 An	.35	Cooperative cataloging
032 Other English-language	082 Ot		Class union catalogs, bibliographical centers [both formerly 025.35] in 021.64
033 Other Germanic languages	083 Ot		
034 French, Provençal, Catalan	084 Fr		
035 Italian, Romanian, etc.	085 Ita		
036 Spanish & Portuguese	086 Sp		
037 Slavic languages	087 Sla	.37	Filing
038 Scandinavian languages	088 Sc		
039 Other languages	089 Ot		
040	090 Mss	→ .4	Classification
041	091 M		Principles, systems, notations
042	092 Bl		
043	093 In		
044	094 Ne	.43	General classification schedules
045	095 Ne		
046	096 Ne	.46	Classification of special subjects
047	097 Ne		Use 025.460 001 - 025.460 005 for standard subdivisions
048	098 Ne		Divide like 001-999, e.g., classification of music 025.467
049	099 Ne		

111

122

in: Melvil Dewey, Dewey Decimal Classification and Relative Index,
17th ed., Lake Placid Club, N.Y., Forest Press, 1965. Vol. I,
pp. 111, 133.

Appendix A
Type 1 (b)

02 Libraries. Librarianship

- 021 FUNCTION, VALUE, UTILITY, CREATION, PUBLICITY, DEVELOPMENT, SCOPE, FINANCIAL UPKEEP OF LIBRARIES. *Cf.* 025.1 .4
 .4 Extension work. Accessory services, lectures, exhibitions, etc. .5
 .6 Development, scope of service. Branches. Library grouping, co-operation. Mobile libraries .52
 .8 Relations with public authorities. Legislation .53
 .9 Financial upkeep, support, funds. *By* :33 .54

- 022 LIBRARY SITE AND PREMISES. *Cf.* 727.8 .6
 .1 Site. *Cf.* 711.5 .7
 .2 Building materials, protection. *By* :691; :699.8 .8
 .3 Planning in general .9
 .4 Storage space, shelving, stacks. *Cf.* 645.45
 .5 Reading rooms. Rooms for study
 .6 Space for administrative and accessory services. Staff rooms, cloak rooms, exhibition halls, etc.
 .7 Lighting. *By* :628.9
 .8 Heating and ventilation. *By* :697
 .9 Various fixtures and fittings

- 023 MANAGEMENT. STAFF
 .3 Administrative council. Trustees. Committee
 .5 Staff. *Use* .08... *from* 35.08 *as needed*.

- 024 USE OF THE LIBRARY. REGULATIONS
 .01 Rules and regulations. Hours of opening. Conditions for borrowing
 .6 Loan details: restrictions, fines, renewal
 .68 Inter-library loans. *Cf.* 021.6; 025.6

→ 025 LIBRARY ADMINISTRATION, METHODS AND ROUTINE

- .1 Executive. General management
 .11 Finance. *Cf.* 021.9
 .2 Accessions
 .21 Book selection
 .22 Book acquisition: purchase, exchange, gift
 .25 Accession methods. Processing
 .3 Cataloguing and indexing. *Cf.* 001.815
 .34 Catalogues according to arrangement, etc.
 .342 Author catalogues
 .343 Subject catalogues (alphabetical, classified)
 .35 Catalogues according to physical form, *e.g.* book-register, loose-leaf, card
 → .4 Documentary classification

- .4 Tax-
 .52 Municipal
 .53 Regional; *Cf.*
 .54 State
 .6 Libraries for specific
 Libraries attached to prison
 .7 Libraries for higher and special establishments. University, college
 .8 Libraries for elementary, secondary schools
 .9 Free access reading and newspaper rooms

- 028 READING. ADVICE FOR READERS.
 Bibliographical psychology. *Cf.* 374.2

- 03 ENCYCLOPAEDIAS. DICTIONARIES. REFERENCE BOOKS. *Cf.* 413

- 030.1 General universal encyclopaedias
 .8 Dictionaries, vocabularies, etc.

- 04 COLLECTIONS OF ESSAYS. OFFPRINTS. REPRINTS. PAMPHLETS. BROCHURES
As (04). *Cf.* 06; 08

05 Periodicals. Reviews

- 050 Business and editorial management. *As* 070
 058 Yearbooks. Directories
 .7 Address books. Lists of names, subscribers.
 Professional lists. Directories. *Cf.* (058.7)
 059 Almanacs. Calendars. *Cf.* 264-11; 529.3/.5

06 Organizations. Associations. Congresses. Museums

- 06.01 Character, constitution, aim, etc.
 .012 Foundation. Fusion. Disbandment
 .013 Statutes, rules, legal personality
 .02 Members: lists, rolls, forms of membership
 .022 Admission, election. Insignia. Resignation
 .023 Individual members: life, honorary, etc.
 .024 Collective membership: sections, groups
 .026 Rights, duties, subscriptions, dues
 .027 Disciplinary measures, suspension, etc.
 .03 Funds. Property. *Cf.* 06.047
 .04 Administrative, executive organs

Appendix A
Type 1 (c)

OUTLINE

LIBRARIES

	Z	
→ 662-	664	Library collections.
→ 665-	718.5	Library science.
665-	674	General.
	674.5	Bibliographical centers.
	675	Classes of libraries.
	677	Library legislation.
	678	Library administration and organization.
679-	680	Architecture, heating, lighting, etc.
	681	Photography in library science.
682-	682.3	Personnel, salaries, etc.
	683	Finance, bookkeeping, etc.
684-	685	Supplies, shelving, etc.
	686	Branches, bookmobiles, etc.
		The collections. The books.
	687	General.
	688	Special collections.
689-	690	Acquisition. Exchanges.
→ 691-	692	Special classes of materials: Pamphlets, maps
→ 695-	699	Cataloging, classification, etc.
700-	701	Bookbinding, conservation, etc.
	702	Thefts and losses.
	703.5	Moving, shelving, etc.
704-	710	Regulations, hours of op
711-	711.97	Reference use, etc.
712-	715	Circulation, loans, chargin
716-	716.1	Library extension, travelin
	716.3	Public relations, publicity,
	716.5	Endowments, bequests.
716.7-	716.8	Libraries and radio and tel
	717	Museums, exhibitions, pho
718-	718.5	Libraries and schools, chilc
719-	725	Libraries (General).
731-	880	Library reports, history, and
881-	981	Library catalogs and bulletin
987-	997	Private libraries. Book colle
993-	996	Bookplates.
998-	1000.5	Booksellers' catalogs, book pr

BIBLIOGRAPHY

1001-	1039	General.
1041-	1115	Anonyms and pseudonyms.
	1121	Books with chronograms.
1201-	5000	National bibliography.
1201-	1212	America.
1215-	1361	United States.
1365-	1401	Canada.
1411-	1431	Mexico.
1437-	1500	Central America.
1501-	1595	West Indies.
1601-	1945	South America.

LIBRARIES

Z

Library science.
The collections. The books--Continued.
Classification and notation.
Cutter, Charles. Expansive classifica-
tion.
Dewey, Melvil. Decimal classification.
U.S. Library of Congress. Classification.
.U4 General works.
.U40 Outline of the classification.
.U5 By class, A-Z.
e.g. .U5A Class A.
.U5B1 Class B, part I, B-BJ.
.U5B2 Class B, part II, BL-BX.
.U5P6-67 Class P and subclasses.
.U5Q Class Q.
By subject or form, A-Z.
e.g. .B9 Business.
.C5 Chemistry.
.C6 Clippings.
.C8 Correspondence.
.F6 Forestry.
.G4 Geography.
.I4 Law.
.M17 Maps.
.M4 Medicine.
.M8 Municipal government.
(.M9) Music, see ML 111.
.P545 Phonorecords.
.S5 Science.
.T45 Telecommunication.
Theology.
.T5 General.
.T51 By religion, denomination,
etc., A-Z.

in: Library of Congress, Classification; Class Z: Bibliography and
Library Science, 4th ed., Washington, 1959. pp. VIII, 29.

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Appendix A
Type 1 (d)

→ ZH Cataloging, Classification and Notation, and Indexing.

This group of subjects may be treated with regard to Libraries, or to Bibliography, or to Documentation. The principles are much the same.

The numeral sub-sections may be requisite for the section, and perhaps under some of the sub-sections; for instance, a literature on Subject-cataloging in Germany is not beyond likelihood.

Elementary and Introductory, Compendious Books.

- ZHA Larger, Comprehensive Works.
Cataloging and Classification.
- ZHB Discourses and Discussions on the group of related subjects.
The Subject-approach to Books.
- ZHC Cataloging (-guing) Books and other Bibliographic materials,
Forms of Catalogs: Books, Cards, Sheaf-catalogs, etc.
- ZHD Author-catalogs, Cataloging under Authors' names, General.
- ZHE Corporate Names: of Corporations, Institutions, Countries,
Municipalities, Cities, etc., Cataloging under these.
- ZHF Special subjects or topics relative to Author-catalogs.
Cataloging by Titles of Books, etc.
- ZHG Bibliographical Cataloging as distinct from Cataloging for
Bibliographic details in Library Catalogs. \ Libraries.

→ ZHM Classification, Bibliographic, and for Libraries.

- ZHN Notation for Classification. See also under Libraries, ZK.
- ZHO Notation for Bibliographic Classification as distinct from
Classification for Libraries.
- ZHP Guide-cards in Card Catalogs, Guides to the Classification and
Notation.
- ZHQ Index to Classification:
Separate from the Classification, or Beside it;
Combined with the Classification, at places within it.
- ZHR Special subjects or topics relative to Classification and to
Subject-catalogs
- ZHS Catalogers and Classifiers: Training, Qualifications, etc.
- ZHT Catalogers, as distinct from Classifiers.
See also under Libraries, ZK.
- ZHU Classifiers, as distinct from Catalogers.
For Bibliographers see Z4.
- ZHV Indexing, General.
- ZHW Indexing Periodicals, the subjects in.
- ZHY Special Subjects and Topics relative to Cataloging, Classification,
and Indexing.
Coöperative Cataloging and Classifying.
Reproduction of Catalogs, Microfilming, etc.
Standardised Cataloging.
Codes for Classifiers.

see next page

from: Bliss, Henry Evelyn. A Bibliographic Classification, extended by
Systematic Auxiliary Schedules for Composite Specification and
Notation. N.Y., H. W. Wilson, 1953. Vol. III.

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Appendix A
Type 1 (d)

- 21 Libraries: Establishment, Services, Administration, Economy.
Alternative is 2X or JV under Education. See also ZC - ZH and ZY.
The numeral sub-sections should conform to Schedule 1, but with the following adaptations. See also ZC and ZG.
- ZN3 History of Libraries, General.
- ZN5 Associations, Societies, Clubs, etc. in general. Institutes.
- 53 History of these.
- 55 Publications not periodical.
- 56 Periodical Publications.
- 57 Staff Meetings on Matters pertaining to the Libraries.
For the several Countries, etc. ZQ, ZR, and ZS are assigned.
- ZN8 Statistics relative to Libraries.
For the Study of Librarianship see ZP.
- ZNA Establishment of Libraries, in general.
- A Foundation of Libraries in the more special sense.
- B Extensive Increase of Libraries in Number and Size.
- C Library Property. See also ZN8, Statistics of Libraries.
- D Fire Insurance.
- E Fires in Libraries.
- F Public Libraries, maintained wholly or partly from Public Funds.
- G Libraries Free to the Public but maintained mostly from Private Funds.
- H National Libraries.
- J State Libraries.
- L City and Town Libraries, Maintained by Municipalities.
- N Village Libraries and other Smaller Libraries.
- P Relations to the State or Municipality.
- Q Legislation Relative to Libraries.
- R Educational Relations, Services, Influences.
- S Sociological Relations. See also Bibliosociology, ZDK - ZDV.
- T Purposes and Values of Libraries other than those named above.
- U Trustees, or others responsible to the Founders.
- Y Special subjects relative to Establishment and Main*
- ZNB Donations, Gifts, for Libraries, and Donors.
- F Friends of the Library Donations.
- ZNC Finances, Funds, Appropriations.
- A Appropriations from Pub'
- B Budgets, Budgeting.
- C Costs of Mainte-
- E Salaries
- J Purch-
- L
- N
- ZNJ Cataloging and Classification for Libraries.
See the note under ZH, Cataloging, Classification, etc.
Details under ZH may be subordinated here, if so preferred.
- ZNK Catalogs for Libraries, alternative to ZHD - ZHL, also ZHR and ZHY.
- ZNL Union Catalogs, combining those of Several Libraries in a District.
Union Finding-lists.
- ZNX Classification for Libraries, and Classifying the Books.
- ZXX Notation. Alternative to ZHX and ZHX.
- ZNO Reclassifying Libraries.
- ZNP Preparing Books for Lending and Charging.

LIBRARY SCIENCE

920 Facet

Facet	Term	(IN) by
[P] [M] [E] [2P]	Library Material Problem	Enumeration Enumeration Enumeration

923 Problem Facet

92351 A specific scheme of classification should be individualised by (CD).

Examples

2.51M Decimal
2.51M9 Expansive
2.51M96 Universal Decimal

2.51N Congress
2.51N3 Colon
2.51N34 Bibliographic

92355 A specific cataloguing code should be individualised by (CD).

924 When the focus in the [E] is Classification, [2P] may be the subject classified and its number should be got by (SD).

Examples of Class Numbers

2.51N3.(2) Colon Classification of library science
2.45.6 Circulation of newspapers
234.81 Book selection in university library
234.45.81 Newspaper selection in university library
268.88 Maintenance work in libraries for the blind
Am55.M Zeitschrift für Instrumentenkunde.

CHAPTER 92
LIBRARY SCIENCE

2 [P]; [M]; [E] [2P]	63	Prisoner
Facet [P]	61	Hospital
	65	Widman
	68	Blind
Trans-local	695	Seafarer
World	95	Contact
Nation	97	Private
Region		
State		
Division		
Local		
District		
City		
Academical	1	Technical treatment
Religious school	2	Classification
Secondary school	3	Classification
College	4	Classification
University	5	Classification
Research	51	Classification
Business	55	Classification
Industry	6	Classification
Newspaper office	61	Classification
Construction	62	Classification
Government department	7	Classification
Other (SD)	8	Classification
(Library)	81	Classification
Reference	811	Classification
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in: S. R. Ranganathan, *Colon Classification*, 4th ed. (reprinted, with amendments),
Fontley, New York, Asia Pub. House, 1973. p. 1.01. 2.30.

1
Appendix E
Type 2

Outline of the Classification

CORE SUBJECTS

A	LIBRARY SCIENCE
Ab/Ay	Common subdivisions (Form)
B	Common subdivisions (Subject)
Bg	Library profession
C	Common subdivisions (Time): History
D	Common subdivisions (Place)
E	Organization & Administration
Eb	Building & Equipment
Es	Organizational & administrative problems
Frr	Staff
G	Processing of library materials
H	Information retrieval
Hf	Classification
Hm	Cataloguing, indexing
K	Assistance to readers. Information work.
I/N	Stock, Library materials
Ib/Iz	By Form
M	By Subject
N/S	Library ownership and use
n/Py	Extent & nature of service
Q	Use of the material
R	<u>Alternative</u> for Minority users
S	Libraries by subject interest
Sd	Special libraries
T	Libraries by owner-cum-user
Tg	'Non-official' institutions
U	Academic institutions
V	'Official' institutions
Vs	Public libraries
W	Libraries by user
Ww	Children's libraries
X	School libraries
Z	<u>Alternative</u> for Users with special subject interest

see next page

from: Classification Research Group. A Classification of Library Science.
Preliminary draft edition. (London, Aslib, 1965).

10
Appendix B
Type 2
(see also App. A)

H	Information retrieval (Indexing in widest sense, covering all methods of indicating likely relevant items - via catalogues, shelf-arrangement, personal assistance)
Hb	Index language
Hbc	Literary warrant
Hbd	Author participation
Hbe	Consistency
Hbh	Specificity
Hbi	Exhaustivity
Hbk	Citation order
Hbp	Permutation
Hc	Content analysis, subject analysis
Hd	Construction of index languages ('Theoretical' classification and indexing)
Hdc	Maintenance
Hdd	Changing
He	Interpretation of index languages ('Practical' classification and indexing)
Hec	Maintenance
Hed	Changing
→ Hf	CLASSIFICATION (i.e. derivation of classes with subsequent systematic arrangement of these)

continued on next page

Appendix B
Type 2 (cont.)
(see also App. A)

Hfc/Hfp	- divided like Hoc/Hbp
Hfj	Class sequence
Hg	Notation
Hgc	Hospitality
Hge	Synthesis
Hgf	Faceted notation
Hgi	Simplicity
Hgj	Brevity
Hgm	Mnemonics
Hgn	Hierarchical
Hgo	Ordinal
Hgq	Ancillaries
Hgs	Alphabetizing marks
Hgt	Chronological marks
Hh	A/Z index
Hhr	Relative index (for construction of A/Z indexes to classified catalogues, <u>see</u> Hy)
Hhs	Chain procedure
Hht	Rotated index
Hjb	Enumerative, semi-enumerative
Hjd	Analytico-synthetic
Hje	Faceted, 'Free-facet' systems
Hjg	General
Hjs	Special
Hk	Classification schemes
Hkg	General (A/Z by author/title)
Hks	Special (by subject, e.g. Hks(O2) Library science: this is an alternative to subordinating to Facet L)

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Appendix C
Type 3 (a)

in: S. S. Ranganathan, The Five Laws of Library Science. Bombay, New York, Asia Pub. House, 1903.

Appendix C
Type 3 (b)
(Type of activity)

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in: Nathan M. Cohen, et al., Library Science Dissertations: 1925-60.
Washington, Office of Education, 1963. p. 89.

Appendix C
Type 3 (c)
(Type of library and task)

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in: K. C. Harrison. First Steps in Librarianship; A Students' Guide,
3rd rev ed., A. Deutsch, 1964.

Appendix C
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in: E. S. Gujrati. Librarianship, New Delhi, Lakshmi Book Store, 1964.

Appendix D

Type 4

262

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in: Allen Kent. Textbook on Mechanized Information Retrieval, New York Interscience Publishers, 1962. p.262.

Appendix E
Type 5

TECHNICAL PROCESSES AND DOCUMENTATION

186. KELLEY, GRACE OSGOOD. The classification of books in terms of use with some regard to the advantages of the subject-catalog. Ph.D., University of Chicago, 1934.

Attempts to determine whether the subject catalog or the classification assigned to books is of greater help to library users. Sources are catalogs of the University of Chicago Library, the Library of Congress, the Massachusetts State Library, and the library of Northwestern University.

Considers recent historical situation with respect to classification, and outlines ways in which libraries have met the need for availability of subject matter. Analyzes in detail 2 out of 13 elements which affect adversely the usefulness of classified arrangements of books. The 13 are shown to be of two main types: those inherent in classification itself, and those due to limitations in its practical application to books.

Concludes that the flexibility of the subject catalog, as opposed to the unavoidable rigidity of classification, makes it the better medium for indicating subject resources of a library.

187. TAUBER, MAURICE FALCOLM. Reclassification and recataloging in college and university libraries. Ph.D., University of Chicago, 1941.

Considers value of classification in college and university libraries from historical and practical, rather than theoretical, point of view, and discusses in detail reasons for reclassification in academic libraries.

Shows how policies of systematic arrangement were influenced by five groups: librarians who were articulate in print and at library conferences, devisers of special systems for specific institutions, catalogers and classifiers, faculty members, and educational officers and surveyors of libraries.

Studies 60 U. S. and Canadian college and university libraries which had changed, or were changing, to the Library of Congress classification. Analyzes validity of reasons for reclassification and recataloging in light of the nature of existing catalogs, the strengths and weaknesses of the systems discarded, needs of the libraries' various clienteles, problems of administration, and cost factors. Concludes that some commonly accepted reasons for reclassification and recataloging are not particularly valid.

689 606 O-63-7

in: Nathan M. Cohen, et al., Library Science Dissertations: 1925-60, Washington, Office of Education, 1963. p.39.

Appendix F
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in: National Science Foundation. Office of Science Information Service.
Current Research and Development in Scientific Documentation.
No. 11, Washington, 1966.

Appendix F
Type 6 (b)

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in: Paul A. Winckler. Library Periodicals Directory, Brookville, N.Y.,
Graduate Library School of Long Island University, 1967.

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in: Library Science Abstracts, Vol. 17, No. 1, Jan.-Mar. 1966. p. iii.

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from: Documentation Abstracts, December 1966. Vol. 1, No. 4.

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From: Abstract Journal; Scientific and Technical Information, (English translation of Referativnij Zhurnal - Nauchnaya i Tekhnicheskaya Informatsiya), No. 4, 1966. p.1.

The diagram is a complex, non-linear flowchart titled "Aids to the Study of Library Science". It is organized into a grid-like structure with interconnected boxes. The main categories and their sub-topics are as follows:

- Classification Systems**
 - Polydecimal Classification
 - Decimal Classifications:
 - Dewey Classification
 - Library of Congress Classification
- Cataloging**
 - Colon Classification
 - Coordinate Classification
 - Facet Classification
- Aspects**
 - Facets
- Encoding**
 - Enciphering
 - Direct Coding
 - Random Coding
 - Fixed Field Coding
 - Superimposed Coding
 - Indirect Coding
 - L'Unité System
- Deciphering**
 - Decoding
 - Transliterations
 - Transnumeration
- Generic**
 - Polyliterary
 - Hierarchy
 - Hierarchical Chain
 - Filliation
- Classification Theory**
 - Mechanical Classification
- Classification**
 - Classification
- Classification Systems**
 - Hierarchical Classification
- Parent Classifications**
 - Classification Systems
- Fields**
 - Areas
 - Subject Fields
 - Disciplines
 - Scope
 - Subject Coverage
- Rationalization**
 - Organization
 - Optimization
- Sequential Array**
 - Closed Array
 - Array
 - Arrangement
- Systematics**
 - Generalization
 - Principles
 - Standards
 - Normalizing
 - Rules
 - Canons
 - Specifications
- Data**
 - Numerical Data
- Accession Numbers**
 - Reference Numbers
 - Serial Numbers
 - Roman Numbers
 - Numbers
 - Digits
 - Cliphers
 - Symbols
 - Ideographs
 - Mnemonics
- Numerical Codes**
 - Alphanumerical Codes
 - Alphabetical Codes
- Alphabet**
 - Greek Alphabet
- Characters**
 - Letters
- Generic Codes**
 - Notation
 - Formulae
- Encoding**
 - Enciphering
- Deciphering**
 - Decoding
- Transliterations**
 - Transnumeration
- Transnumeration**
 - Transliterations
- Alphabetical Codes**
 - Alphanumerical Codes
- Alphanumerical Codes**
 - Alphabetical Codes
- Alphabet**
 - Greek Alphabet
- Characters**
 - Letters
- Cliphers**
 - Symbols
 - Ideographs
 - Mnemonics
- Numbers**
 - Digits
 - Cliphers
- Digits**
 - Cliphers
- Cliphers**
 - Symbols
 - Ideographs
 - Mnemonics
- Symbols**
 - Ideographs
 - Mnemonics
- Ideographs**
 - Mnemonics
- Mnemonics**
 - Ideographs

Thesaurus of Documentation Terms
Do 3 : Classification

in: Classification Research. Proceedings of Second International Study Conference. Copenhagen, Munksgaard, 1965. p.316.

Appendix H

Type 2

III: SELECTED SPECIALIZED SCHEMES

Thesaurus of Documentation Terms

Keyword List

04 Abstracting	05 Electrophotography	01 Photographs
04 Abstracts	01 Errors	05 Photography
03 Abbreviations	03 Facet Classification	02 Polyterms
06 Access	05 File Cards	01 Preprints
05 Accessions	05 Filing	05 Printing
03 Alphabetical Codes	03 Hierarchy	01 Publications
05 Analytic Files	06 Hits	01 Publicity
06 Analog Computers	02 Homonyms	01 Publishing
06 Answers	05 IBM Cards	05 Punched Cards
05 Archives	04 Index Entries	05 Punched Tapes
01 Articles	04 Indexes	06 Questions
03 Array	04 Indexing	05 Reading Machines
04 Association	04 Indexing Depth	05 Recording
06 Automation	02 Information	04 Redundancy
04 Bibliographic Data	06 Information Retrieval	06 Relevance
01 Bibliographies	06 Information Services	01 Reports
03 Bits	05 Information Storage	01 Reprints
01 Books	01 Journals	05 Reproduction
01 Brochures	04 Keyword Assignment	01 Reviews
05 Card Files	04 Keyword Frequency	04 Roles
01 Catalogs	02 Keywords	06 Scanning
03 Categories	02 Knowledge	03 Schedules
04 Chain Indexing	04 KWIC Indexes	06 SDI Services
03 Characters	02 Languages	06 Search Strategy
04 Citations	01 Legal Documents	06 Searches
03 Classification	05 Libraries	01 Secret Documents
03 Classification Systems	04 Links	02 Semantics
03 Codes	06 Logic	06 Sorting
03 Coding	05 Magnetic Tapes	02 Speech
05 Collections	06 Manual Searches	02 Spelling
05 Compiling	01 Manuals	03 Standards
06 Computer Programs	01 Manuscripts	01 Statistics
06 Computers	01 Maps	03 Subject Fields
06 Communication Systems	06 Matching	04 Subject Indexes
01 Communications	06 Mathematical Models	02 Subject Headings
02 Concepts	05 Memory	03 Symbols
04 Concept Coordination	05 Microfilm Readers	05 Synthetic Files
01 Conference Papers	05 Microfilms	02 Synonyms
04 Content Analysis	06 Misses	02 Syntax
04 Copulae	02 Names	01 Tables
02 Cross References	06 Noise	02 Terminology
04 Cumulations	03 Numbers	02 Thesaurus
06 Data Processing	03 Numerical Codes	06 Time Lags
03 Decimal Classifications	03 Numerical Data	04 Titles
02 Definitions	02 Open End Terms	05 Transcription
01 Diagrams	03 Organization	02 Translations
02 Dictionaries	04 Pagination	05 Typewriters
01 Dissertations	05 Paper Tape Typewriters	03 UDC
05 Documentation	03 Patent Classifications	02 Uniterms
06 Documentation Centers	01 Patents	05 Updating
01 Documents	05 Peek-A-Boo Cards	06 Users
01 Drawings	01 Periodicals	02 Vocabularies
05 Edge-Notched-Cards	05 Photocomposition	02 Words
01 Education	05 Photographic Storage	

in: Classification Research. Proceedings of Second International Study Conference. Copenhagen, Munksgaard, 1965. p.320.

GROUPE D'ETUDE SUR L'INFORMATION SCIENTIFIQUE

Research Programme under contract n° 67 00 611 between the
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and the Association Marc Bloch

DOCUMENTARY LEXICON FOR
SCIENTIFIC INFORMATION

by Natacha GARDIN
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1.2. Lexical categorization

Information language types as to their lexical components, listed below by order of increasing complexity. (The field of application of the information language concerned is to be noted down in every possible case).

lexicon : generalities

Types of problems encountered when the lexical components of an information language are established. Studies on terminology in a given domain.

vocabulary

List of specialized terms, with or without definitions, not conceptually organized (not to be confused with the term "vocabulary" in Chapter LINGUISTICS).

documentation glossary

Dictionary of indexing terms, listed in alphabetical order, including references of the "see" and "see also" type. This dictionary may be used by human indexers or may serve as a machine indexing device.

Note : Studies of these information languages components should not be confused with those concerned with "glossaries" and dictionaries" as such (cf. Chapter I. Section Secondary Documentation.)

classification

Set of terms conceptually organized - as opposed to the alphabetical list mentioned above.

Note : 1) The proper name of a classification is to be, at times, mentioned twice:(see below) and in Section D, Information Languages, Chapter ANNEXES.

2) The following terms are not concerned with "automatic

classification", as defined in the preceding Chapter .

classification : generalities

Studies on the general concept of classification. Surveys of existing classifications, the needs and uses of such instruments. Faceted classifications are here excluded (see below).

classification : "name"

Description of a given classification (to the exclusion of faceted classifications and the U.D.C.) whose proper name is to be mentioned with the present descriptor.

classification : "field"

Studies about the application of a given classification to a given domain (excluding the application of faceted classification and of the U.D.C.)

classification : comparison

Comparative or evaluative study (efficiency, costs, etc.). If detailed descriptions of the classification concerned are given and if they are properly identified the above mentioned term is also used, i.e. "classification : name". If however, only the names are quoted, mentions of those are to be made in Section D, Information Languages, Chapter ANNEXES.

This term is used for all compared classifications (faceted classifications, U.D.C., etc...)

classification : compatibility

Studies on compatibility between two or more classifications, excluding compatibility studies between faceted classifications (cf. below the term "faceted classifications : compatibility").

classification : U.D.C.

Studies on U.D.C. ; problems of translation, mechanization, uses, independently of the field of application.

classification U.D.C. : domain

Studies about the application or use of U.D.C. in a given domain, such as its adequacy, projected modifications, etc...

Note : If U.D.C. is one of the compared classifications, or if its compatibility to another one is studied, two of the above mentioned descriptors should be used simultaneously ; the present descriptor should also be used if the field of application is precisely mentioned.

faceted classification : generalities

General studies on the problem of facets.

faceted classification : "name"

Study of a given and denominated faceted classification - e.g. Colon, C.P.G., etc...

faceted classification : "domain"

Studies about the uses and qualities of faceted classifications when applied to a given field.

faceted classification : compatibility

Theoretical or empirical studies about compatibility between various faceted classifications (selection and use of categories, indexing problems, etc.). If such or other classifications are mainly compared, the above mentioned term "classification : comparison" is to be used.

thesaurus : generalities

Theoretical studies on ways to build and organize a dictionary for translating natural language statements into information language statements.

The actual organization of this dictionary is indifferent here - alphabetical or conceptual order, inclusion or not of definitions, stored or non-stored data, etc...

thesaurus : "name"

Studies about given thesauri whose appellations may be proper names, research groups involved in their creation, etc. - e.g. E.J.C., ASTIA, etc...

thesaurus : "domain"

Studies about the application of a thesaurus or thesauri to a given field. This descriptor is to be used when the thesaurus under consideration carries no name ; otherwise the above mentioned term is to be used.

1.3. Documentary syntax

This section is concerned with the problems raised by artificial syntax in information languages - links, modifiers, relationships of all kinds between indexing terms. Descriptors relating to syntactic considerations in natural languages are to be found in Chapter LINGUISTICS, of CONNECTED FIELDS.

If syntactic analysis procedures are more particularly considered, the corresponding term in Section "Natural Language analysis" of the present Chapter (cf. below) is to be used.

syntax : generalities

General, theoretical studies about syntax in information languages. If more details are given, one of the terms below should be selected.

GRUPE D'ETUDE SUR L'INFORMATION SCIENTIFIQUE

Convention de Recherche n° 67 OG 611 entre la

Délégation Générale à la Recherche Scientifique et Technique

et l'Association Marc Bloch

ETUDE DE CONCORDANCE INTERLEXICALE DANS LE DOMAINE
DE
L'INFORMATION SCIENTIFIQUE ET TECHNIQUE

Document préparatoire à la réunion organisée par le G. E. I. S.
à Marseille du 15 au 18 Janvier 1968
(C.N.R.S. 31, Chemin Joseph Aiguier - MARSEILLE (9e) - tel. 76.12.20)

Novembre 1967

* Caractérisation ou représentation d'un document (forme et/ou contenu) au moyen de termes (mots-vedette, descripteurs, termes d'indexation, etc.) tirés d'un langage documentaire quelconque : classification, liste alphabétique de descripteurs, thesaurus, etc. ; principes et méthodes.

Etudes sur des langages documentaires particuliers.

Mécanisation** de l'indexation, i.e. de la conversion du langage naturel au langage documentaire, dans quelque domaine et pour quelque langue que ce soit.

Mécanisation** de la classification, i.e. de la genèse des langages documentaires utilisés pour l'indexation***.

N.B. *a. Les processus de la classification et de l'indexation paraissent indissociables, même si l'on peut parfois distinguer des outils tels que classifications d'une part, listes alphabétiques de termes d'indexation d'autre part.

**b. Le terme "mécanisation" est pris ici dans un sens large, qui comprend l'étude d'algorithmes, même lorsque ceux-ci n'ont pas fait l'objet d'applications sur machine.

***c. Les études théoriques sur les méthodes de classification automatique, intéressant quelque objet que ce soit - linguistique ou, non - relèvent des mathématiques, cf. groupe 4 ; seules les applications à la documentation sont ici prises en compte.

d. Sur les travaux de lexicographie entrepris dans le cadre de telle ou telle langue naturelle, et qui peuvent conduire à la construction d'un langage documentaire, cf. groupe 24.

GROUPE 16 (suite)

Types de classification

- in Thesaurus [Types of Ind.]
- Indexes [Types of Ind.]
- Coordinate Classification
- [Class. Order and Syst.]
- Enumerative Classification
- [Class. Order and Syst.]
- Faceted Classification
- [Class. Order and Syst.]
- Classification Systems
- [Class. Order and Syst.]

Noms des classifications

- Bliss Classification
- [Class. Order and Syst.]
- Colon Classification
- [Class. Order and Syst.]
- Dewey Decimal Classification
- [Class. Order and Syst.]
- U. D. C. [Class. Order and Syst.]
- Library of Congress Classification
- [Class. Order and Syst.]

Demande des classifications

BUNTRICK	COATES	DARL
	- Faceted Classification : Sc. and T. Lib.	- Classification
		- C. D. U.

- Classification à facettes : généralités [Types Lex.]
- in Thésaurus : généralités [Types Lex.]
- Glossaire documentaire [Types Lex.]
- Classification [Types Lex.]

- Classification [Class. Syst.]
- Postcoordinate System [Class. Syst.]
- Precoordinate System [Class. Syst.]
- Alphabetic Classification [Class. Syst.]
- Alphabetic Arrangement [Arrangements]

- Classification
- Facet Classification

- Langage documentaire : nom [L. D.]
- Classification : nom [Types Lex.]
- Classification : C.D.U. [Types Lex.]
- Classification à facettes : nom [Types Lex.]
- Thésaurus : nom [Types Lex.]

- U. D. C. [Class. Syst.]
- Auxiliary U.D.C. Tables [Class. Tables]
- Congress Library Classification System [Ind. Class. Syst.]
- Dewey's Decimal Classification [Ind. Class. Syst.]
- Lenin's Library Classification System [Ind. Class. Syst.]
- Ranganathan's Colon Classification [Ind. Class. Syst.]

- Langage documentaire : domaine [L. D.]
- Classification : domaine [Types Lex.]
- Classification à facettes : domaine [Types Lex.]
- Thésaurus : domaine [Types Lex.]

- Library Classification [Class. Syst.]
- Patent Classification [Class. Syst.]
- General Classification System [Class. Syst.]
- Special Classification System [Class. Syst.]

- Patent Classification